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EXAMINER

KORNAKOV, MICHAIL

ART UNIT

PAPER NUMBER

1746

DATE MAILED: 08/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/869,213

Applicant(s)

POKORNY ET AL.

Examiner

Michael Komakov

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 33-62 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 33-62 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 September 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: page 15, lines 7-9 of the instant disclosure recite substrate 3 and the base 10, "as shown in Fig. 5". However Fig 5 does not include the indicated reference signs. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:

Page 18, line 1 recites "to **the** clean the outside...". Apparently, this is a typo and ---to clean the outside...--- should be written.

Appropriate correction is required.

Claim Objections

3. Claims 1 and 54 are objected to because of the following informalities:

- claims 1 and 54 recite "said second nozzles are separately controllable from said at least one first nozzle", which is not readily ascertainable. Apparently, the separate control for the second nozzles and for the at least one first nozzle is indicated.

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- claim 54 recite "an angle of less than 90°". Apparently, an angle of less than 90° **relative to nozzle plate** is indicated
- the specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). The instant claim 45 recites "an **insert**...", and wherein said at least one nozzle is provided in said **insert**". However, the recited "insert" apparently is not indicated in the instant disclosure. Correction and/or clarification is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

5. Claims 33, 35, 45 and 54 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Claim 33 recites the limitation "said nozzle **plates**" in line 10, page 3. There is insufficient antecedent basis for this limitation in the claim.
- Claim 35 recites "a prescribed contour, **especially** a straight line". The use of such phrase to link a broader range of values and/or meanings with a narrower range of values and/or meanings renders the claim to be indefinite. It is not clear what controls the actual metes and bounds of the claimed subject matter. If a preferred embodiment is stated in a single claim, examples and preferences lead to confusion over the intended

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scope of the claim, because the metes and bounds of the claim are not clearly set forth.

See ***MPEP 2173.05(c)***.

- The recited in claim 45 "insert" constitutes an indefinite subject matter as per metes and bounds of such are not readily ascertainable.
 - The recited in claim 54 "conducting a fluid via said at least one first nozzle and transverse to said radial flow..." constitutes an indefinite subject matter as per metes and bounds of such are not readily ascertainable. It is not clear how to provide fluid in radial flow and transverse it "conducting a fluid via said at least one first nozzle"
- Clarifications and/or corrections are required.
- Claims 34, 36-44, 46-53, 55-62 are rejected because of their dependency.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 33-46, 51-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wada et al (U.S. 5879,576).

Wada teaches substrate processing apparatus, which comprises a horizontally disposed support arm (reads on nozzle plate, as instantly claimed), carrying a feed nozzle, which is extended perpendicular thereto (reads on at least one first nozzle, as instantly claimed) and a plural number of wash nozzles, which are arranged at oblique angles relative thereto (reads on a plurality of second nozzles, as instantly claimed). The wash nozzles of Wada are fully capable of providing a flow, transverse to a flow, provided by the feed nozzle, and deflecting the feed nozzle flow in a spirally outwardly extending way. The wash nozzles form a straight line (col.5, lines 4-9; paragraph bridging col. 5 and 6; Fig. 3, 5). The feed nozzle and wash nozzles are supplied with different fluids. Wada provides a common base for the nozzle system (col.5, lines 9-15; Fig 3, ref. 28-30). The apparatus of Wada includes the collecting chamber (col.7, lines 20-36), which reads on fluid chamber as recited in the instant claim 46. The apparatus

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of Wada is equipped with substrate carrier and an assembly for providing a fluid to said substrate carrier (col.4, lines 22-39; col. 9, lines 8-30; Fig.1).

With regard to the limitation of claim 37, which is concerned with at least one further nozzle, disposed between the first nozzle and the second nozzles and directed radially relative to the first nozzle, since Wada teaches positioning wash nozzles at oblique angles relative to support arm, one of the wash nozzles, which is the very next to feed nozzle, reads on "at least one further nozzle".

The limitations of claims 42 and 43, which recite "can be applied" and "can be conducted" are treated in the instant Office Action as optional. However, the apparatus of Wada allows the application of vacuum to feed nozzle and wash nozzles of Wada are capable of conducting gaseous media.

While being positioned essentially centrally relative to substrate, the feed nozzle of Wada is not disposed essentially centrally relative to support arm. However, the court held that the configuration of the claimed apparatus is a matter of choice, which a person of ordinary skill in the art would have found **obvious** absent persuasive evidence that the particular configuration of the claimed apparatus is significant, consult *In re Dailey*, 357 F. 2d 669,149 USPQ 47 (CCPA 1966).

10. Claims 54-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunze-Concewitz (U.S. 5,964,952).

Kunze-Concewitz teaches a method for cleaning contaminated surfaces including the steps of providing a nozzle assembly, which includes separately controllable nozzle and a water lance; applying a fluid via said nozzle orthogonally

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(reads on “at a right angle”, as instantly claimed) onto the surface to be cleaned, thus distributing the said fluid over the surface to be cleaned and simultaneously spraying water through the water lance (reads on “a plurality of second nozzles) obliquely to the surface to be cleaned (Fig. 12, 14, 15; col. 6, lines 46-61; col. 7, lines 2-3, 27-32; col.8, lines 4-7). Because the direction of water spray is transverse to the flow of fluid, applied to substrate surface via nozzle (Fig. 15) and the substrate is moved toward the cleaning nozzles, outwardly deflection of flow fluid is inherent in the process of Kunze-Concewitz.

While spraying water through the water lance obliquely to the surface to be cleaned, Kunze-Concewitz does not specifically indicate that water contacts the substrate surface at an angle of 45°. Varying the angle formed between the water spray and the surface to be cleaned affects the cleaning ability of water spray due to changing the pressure and direction of water flow toward the surface to be cleaned. However, discovery of optimum value of result effective variable in known process is ordinarily within the skill in the art and would have been obvious, consult *In re Boesch* and *Slaney* 205 USPQ 215 (CCPA 1980).

While teaching the surface cleaning with the steps similar to the instantly claimed, Kunze-Concewitz remains silent about using a nozzle plate, wherein the nozzle is disposed essentially centrally relative to said nozzle plate. However, if the operation is known in reference to the object or process, the invention of the new machine for performing it does not make a new process, but only a new instrument for applying it, *In re Terezy-Hornoch*, 158 USPQ 141 (CCPA 1968).

Allowable Subject Matter

12. Claims 47-50 and 60-62 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

13. The following is a statement of reasons for the indication of allowable subject matter: While teaching an apparatus for processing substrates with structural elements, identical to those instantly claimed, the prior art references fail to anticipate or suggest fairly the cleaning apparatus having a base, which includes a plurality of bores for accommodating adjustable spacers and overflow collar with inwardly directed nozzle. While teaching a method of surface cleaning with the steps, similar to those instantly claimed the prior art references fail to anticipate or suggest fairly the steps of applying a vacuum to the nozzle, a step of conducting a gas via lance nozzles structure (secondary nozzles) and a step of providing an overflow collar having at least one further nozzle, wherein said nozzle is utilized for conducting a fluid onto an outer surface of a substrate carrier.

14. Applicant should note that additional prior art cited in PTOL-892 shows general state of the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Kornakov whose telephone number is (703) 305-0400. The examiner can normally be reached on 9:00am - 5:30pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (703) 308-4333. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 2450.

A handwritten signature in black ink, appearing to read "M. Kornakov" with a stylized flourish at the end.

Michael Kornakov
Examiner
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